Journal of Comparative Physiology

Volume 140 1980

A · Sensory, Neural, and Behavioral Physiology

Editorial Board

H. Autrum, München
R. R. Capranica, Ithaca, NY
K. von Frisch, München
G. A. Horridge, Canberra City
M. Lindauer, Würzburg
C. L. Prosser, Urbana, IL

Advisory Board

H. Atwood, Toronto
J. M. Camhi, Ithaca, NY
J.A. Coles, Genève
S. Daan, Haren
F. Delcomyn, Urbana, IL
W. H. Fahrenbach, Beaverton, OR
K. Hansen, Regensburg
B. Hölldobler, Cambridge, MA
Y. Katsuki, Okazaki
M. Konishi, Pasadena, CA
M. F. Land, Brighton
M. S. Laverack, St. Andrews
H. C. Lüttgau, Bochum
H. Markl, Konstanz
A. Michelsen, Odense
D. Ottoson, Stockholm
F. Papi, Pisa
W. Precht, Zürich
J. D. Pye, London
A. Roth, München
H. F. Rowell, Berkeley, CA
D. G. Stavenga, Groningen
R. Wehner, Zürich
J. J. Wine, Stanford, CA

B · Biochemical, Systemic, and Environmental Physiology

Editorial Board

K. Johansen, Aarhus
B. Linzen, München
W. T. W. Potts, Lancaster
C. L. Prosser, Urbana, IL

Advisory Board

G. A. Bartholomew, Los Angeles, CA
H. Bern, Berkeley, CA
P. J. Butler, Birmingham
Th. Eisner, Ithaca, NY
D. H. Evans, Coral Gables, FL
P. W. Hochachka, Vancouver, B.C.
S. Nilsson, Göteborg
D. Randall, Vancouver, B.C.
R. B. Reeves, Buffalo, NY
G. H. Satchell, Dunedin
T. J. Shuttleworth, Exeter
G. Somero, La Jolla, CA
K. Urich, Mainz
S. Utida, Kagoshima
G. R. Wyatt, Kingston, Ontario
E. Zebe, Münster

Springer International

Journal of Comparative Physiology

A · Sensory, Neural, and Behavioral Physiology

B · Biochemical, Systemic, and Environmental Physiology

Founded in 1924 by K. von Frisch and A. Kühn, Volumes 1–29 (1934) under the title "Zeitschrift für wissenschaftliche Biologie, Abt. C: Zeitschrift für vergleichende Physiologie". Volumes 30–76 (1972) published as "Zeitschrift für vergleichende Physiologie". Volumes 77–92 (1974) published under the title "Journal of Comparative Physiology". Beginning with Volume 93 (1974) called "Journal of Comparative Physiology A · Sensory, Neural, and Behavioral Physiology B · Metabolic and Transport Functions". Beginning with Volume 123 (1978) Section B called "Biochemical, Systemic, and Environmental Physiology".

Copyright

It is a fundamental condition that submitted manuscripts have not been published and will not be simultaneously submitted or published elsewhere. By submitting a manuscript, the authors agree that the copyright for their article is transferred to the publisher if and when the article is accepted for publication. The copyright covers the exclusive rights to reproduce and distribute the article, including reprints, photographic reproductions, microform or any other reproductions of similar nature, and translations.

Photographic reproduction, microform, or any other reproduction of text, figures, or tables from this journal is prohibited without permission obtained from the publisher.

Special Regulations for the USA

The Article Fee Code on the first page of an article in this journal indicates the copyright owner's consent that in the USA copies may be made for personal or internal use, provided the stated fee for copying beyond that permitted by Section 107 or 108 of the United States Copyright Law is paid through the Copyright Clearance Center, Inc., 21 Congress Street, Salem, MA 01970, USA.

If a code does not appear, copies of the article may be made without charge, provided permission is obtained from the publisher.

The copyright owner's consent does not extend to copying for general distribution, for promotion, for creating new works, or for resale. Specific written permission must be obtained from the publisher for such copying.

The use of general descriptive names, trade names, trade marks, etc., in this publication, even if the former are not specifically identified, is not to be taken as a sign that such names are exempt from the relevant protective laws and regulations and may accordingly be used freely by anyone.

Alle Rechte, einschließlich das der Übersetzung in fremde Sprachen und das der fotomechanischen Wiedergabe oder einer sonstigen Vervielfältigung, auch in Mikroform, vorbehalten. Jedoch wird gewerblichen Unternehmen für den innerbetrieblichen Gebrauch nach Maßgabe des zwischen dem Börsenverein des Deutschen Buchhandels e. V. und dem Bundesverband der Deutschen Industrie abgeschlossenen Rahmenabkommens die Anfertigung einer fototechnischen Vervielfältigung gestattet. Wenn für diese Zeitschrift kein Pauschalabkommen mit dem Verlag vereinbart worden ist, ist eine Wertmarke im Betrage von DM 0,40 pro Seite zu verwenden.

Springer-Verlag Berlin Heidelberg New York
Printers: Universitätsdruckerei H. Stürtz AG, Würzburg
Printed in Germany – © by Springer-Verlag Berlin Heidelberg 1980

Springer-Verlag
Journal Production Dept. I
Postfach 105280
D-6900 Heidelberg 1
Telephone (06221) 487332
Telex 04-61690

Springer-Verlag
Heidelberger Platz 3
D-1000 Berlin 33
Telephone (030) 8207-1
Telex 01-83319

Springer-Verlag New York Inc.
175 Fifth Avenue
New York, NY 10010, USA
Telephone (212) 477-8200
Telex 0023232235

Contents

(A) = Section A · Sensory, Neural, and Behavioral Physiology; (B) = Section B · Biochemical, Systemic, and Environmental Physiology

Abbotts, B., Wang, L.C.H.: Seasonal Thermogenic Capacity in a Hibernator, *Spermophilus richardsonii* (B) 235

Ache, B.W., Sandeman, D.C.: Olfactory-Induced Central Neural Activity in the Murray Crayfish, *Euastacus armatus* (A) 295

Baby, T.G., Reddy, S.R.R.: Arginine Metabolism in Purinotelic Animals. I. Characterization of Arginase and Absence of Other Urea Cycle Enzymes in the Lizard, *Calotes versicolor* (B) 261

Barthelemy, L., see Thomas, S., et al. (B) 249

Belaud, A., see Thomas, S., et al. (B) 249

Binkley, S., Reilly, K., Hernandez, T.: N-Acetyltransferase in the Chick Retina. II. Interactions of the Eyes and Pineal Gland in Response to Light (B) 181

Bleckmann, H.: Reaction Time and Stimulus Frequency in Prey Localization in the Surface-Feeding Fish *Aplocheilus lineatus* (A) 163

Bowerman, R.F., Burrows, M.: The Morphology and Physiology of Some Walking Leg Motor Neurones in a Scorpion (A) 31

Boyan, G.S.: Auditory Neurones in the Brain of the Cricket *Gryllus bimaculatus* (De Geer) (A) 81

Brewer, K.J., McKeown, B.A.: Prolactin Regulation in the Coho Salmon, *Oncorhynchus kisutch* (B) 217

Brzoska, J., Obert, H.-J.: Acoustic Signals Influencing the Hormone Production of the Testes in the Grass Frog (A) 25

Burrows, M., see Bowerman, R.F. (A) 31

Collett, T.S.: Angular Tracking and the Optomotor Response. An Analysis of Visual Reflex Interaction in a Hoverfly (A) 145

Dejours, P., see Massabuau, J.-C., et al. (B) 193

Dvorak, D.R., see Srinivasan, M.V. (A) 1

Eaton, R.C., Kimmel, C.B.: Directional Sensitivity of the Mauthner Cell System to Vibrational Stimulation in Zebrafish Larvae (A) 337

Eaton, R.C., see Kimmel, C.B., et al. (A) 343

Eclancher, B., see Massabuau, J.-C., et al. (B) 193

Glantz, R.M., Kirk, M.D.: Intercellular Dye Migration and Electrotonic Coupling Within Neuronal Networks of the Crayfish Brain (A) 121

Grossman, M.L., see Stein, P.S.G. (A) 287

Halls, J.A.T., see Silver, S.C. (A) 159

Heisenberg, M., see Wolf, R. (A) 69

Hernandez, T., see Binkley, S., et al. (B) 181

Hoffmann, K.-P., see Katte, O. (A) 53

Johnsen, P.B., Teeter, J.H.: Spatial Gradient Detection of Chemical Cues by Catfish (A) 95

Johnson, M.A., see Stark, W.S. (A) 275

Katte, O., Hoffmann, K.-P.: Direction Specific Neurons in the Pretectum of the Frog (*Rana esculenta*) (A) 53

Kien, J.: Mechanisms of Motor Control by Plurisegmental Interneurons in Locusts (A) 303

Kien, J.: Morphology of Locust Neck Muscle Motoneurons and Some of Their Inputs (A) 321

Kimmel, C.B., see Eaton, R.C. (A) 337

Kimmel, C.B., Eaton, R.C., Powell, S.L.: Decreased Fast-Start Performance of Zebrafish Larvae Lacking Mauthner Neurons (A) 343

Kirk, M.D., see Glantz, R.M. (A) 121

Markl, J.: Hemocyanins in Spiders. XI. The Quaternary Structure of *Cupiennius* Hemocyanin (B) 199

Maskrey, M., see Nicol, S.C. (B) 241

Massabuau, J.-C., Eclancher, B., Dejours, P.: Ventilatory Reflex Response to Hyperoxia in the Crayfish, *Astacus pallipes* (B) 193

McKeown, B.A., see Brewer, K.J. (B) 217

Meissl, H., Ueck, M.: Extraocular Photoreception of the Pineal Gland of the Aquatic Turtle *Pseudemys scripta elegans* (A) 173

Mittenthal, J.E., see Smith, P.H. (A) 351

Miyazaki, S.: The Ionic Mechanism of Action Potentials in Neurosecretory Cells and Non-Neurosecretory Cells of the Silkworm (A) 43

Myrberg, A.A., Jr., Spires, J.Y.: Hearing in Damselfishes: An Analysis of Signal Detection Among Closely Related Species (A) 135

Nicol, S.C., Maskrey, M.: Thermoregulation, Respiration and Sleep in the Tasmanian Devil, *Sarcophilus harrisii* (Marsupialia: Dasyuridae) (B) 241

Nikinmaa, M., Tuurala, H., Soivio, A.: Thermoacclimatory Changes in Blood Oxygen Binding Properties and Gill Secondary Lamellar Structure of *Salmo gairdneri* (B) . 255

Obert, H.-J., see Brzoska, J. (A) 25

Peyraud, C., see Thomas, S., et al. (B) 249

Powell, S.L., see Kimmel, C.B., et al. (A) 343

Reddy, S.R.R., see Baby, T.G. (B) 261

Reilly, K., see Binkley, S., et al. (B) 181

Rheinlaender, J., Römer, H.: Bilateral Coding of Sound Direction in the CNS of the Bushcricket *Tettigonia viridissima* L. (Orthoptera, Tettigoniidae) (A) 101

Römer, H., see Rheinlaender, J. (A) 101

Sandeman, D.C., see Ache, B.W. (A) 295

Schwind, R.: Geometrical Optics of the *Notonecta* Eye: Adaptations to Optical Environment and Way of Life (A) . 59

Shuttleworth, T.J., Thompson, J.L.: The Mechanism of Cyclic AMP Stimulation of Secretion in the Dogfish Rectal Gland (B) 209

Silver, S.C., Halls, J.A.T.: Recording the Sounds of Hydropsychid Larvae – A Cautionary Tale (A) 159

Smith, P.H., Mittenthal, J.E.: Intersegmental Variation of Afferent Pathways to Giant Interneurons of the Earthworm, *Lumbricus terrestris* L. (A) 351

Soivio, A., see Nikinmaa, M., et al. (B) 255

Spires, J.Y., see Myrberg, A.A., Jr. (A) 135

Srinivasan, M.V., Dvorak, D.R.: Spatial Processing of Visual Information in the Movement-Detecting Pathway of the Fly. Characteristics and Functional Significance (A) . . 1
Stark, W.S., Johnson, M.A.: Microspectrophotometry of *Drosophila* Visual Pigments: Determinations of Conversion Efficiency in R1-6 Receptors (A) 275
Stein, P.S.G., Grossman, M.L.: Central Program for Scratch Reflex in Turtle (A) 287
Teeter, J.H., see Johnsen, P.B. (A) 95
Thomas, S., Belaud, A., Barthelemy, L., Peyraud, C.: Acid-Base Status in Plasma of Trout and Eel in Hypocapnic and Normocapnic Conditions (B) 249
Thompson, J.L., see Shuttleworth, T.J. (B) 209
Tuurala, H., see Nikinmaa, M., et al. (B) 255
Ueck, M., see Meissl, H. (A) 173
Vislie, T.: Hyper-Osmotic Cell Volume Regulation in vivo and in vitro in Flounder (*Platichthys flesus*) Heart Ventricles (B) 185
Walker, E., see Wheatley, D.N. (B) 267
Wang, L.C.H., see Abbotts, B. (B) 235
Wever, R.A.: Circadian Rhythms of Finches Under Steadily Changing Light Intensity: Are Self-Sustaining Circadian Rhythms Self-Excitatory? (A) 113
Wheatley, D.N., Walker, E.: Comparison of Amino Acid Uptake and Incorporation in *Tetrahymena pyriformis* and HeLa Cells (B) 267
Wolf, R., Heisenberg, M.: On the Fine Structure of Yaw Torque in Visual Flight Orientation of *Drosophila melanogaster*. II. A Temporally and Spatially Variable Weighting Function for the Visual Field ('Visual Attention') (A) . 69
Zachariassen, K.E.: The Role of Polyols and Nucleating Agents in Cold-Hardy Beetles (B) 227

Indexed in Current Contents